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EXAMINER

SAJOUS, WESNER

ART UNIT PAPER NUMBER

2628

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,919

Applicant(s)

MAILLOT ET AL.

Examiner

Sajous Wesner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 22-25 and 28-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36 is/are allowed.
- 6) ☒ Claim(s) 1-14, 18, 19, 22-25, 28, 30-35 and 37-41 is/are rejected.
- 7) ☒ Claim(s) 15-17 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to the amendment filed on 1/13/06. Claims 1-19, 22-25, 28-41 are presented for examination.

Response to Arguments

Regarding Applicants' argument with respect to claim 4, the Applicants are noted that since the painting is done directly on the 3D shape object (see paragraph 4 of page 216), it is therefore performed painting the brush on the 2D space of the object. The citation at paragraph 1 of page 218 (i.e., Since parameter space brushes... direction view") is merely cited by Hanrahan as an example to show the distinction between using a real-time 3D brushes that performs direct manipulation, and a 2D brushes that requires different steps before a painted object is generated. The citation by Hanrahan does not contradict the directness assertion described in paragraph 4 of page 216. In fact, the citation in page 218 suggests that the later technique does not work well for tangent-space brushes. Hanrahan's concern is to provide a direct "what-you-see-is-what-you-get" (WYSIWYG) painting, so as to overcome the problems of conventional 2D painting (see paragraph 3 of pages 215 & 221). Hence, Applicants argument is not persuasive.

All other arguments are moot in view of the rejections below.

Claim Rejections - 35 USC § 102

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 9, 11-12, 14, 28, 31, 34-35 and 38-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanrahan et al. (Direct WYSIWYG Painting and Texturing on 3D Shapes" Computer graphics, Vol. 24, No. 4, August 1990, pp. 215-223).

Regarding claim 1, Hanrahan discloses a method for selecting an area of a displayed parametric object living in three dimensional; and painting a brush texture map of a brush directly onto a surface of the area of the displayed parametric object in the three dimensional space based on brush orientations (e.g., allowing a user to directly paint onto 3D shapes using a brush by applying paint to the shape of an object being painted on the surface of the object, (see paragraph 4 of page 216)), wherein the brush orientations [inherently] minimize a distortion of a painted texture when displayed. [it should be noted since Hanrahan is concerned about direct manipulation of a paint brush on a surface or a WYSIWYG paint program (see abstract and paragraph 3 of col. 2 of pages 215 & 221) and to provide a real-time display or natural representation of the brush (see page 219 starting with section), it is inherent that the brush orientations are applied to minimize distortions of a painted texture when displayed].

Regarding claim 2, Hanrahan discloses the painting is performed and the distortion is minimized independently of view (see paragraph 6 of page 217 & paragraph

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4 of section 3 at page 219, wherein it is suggested that painting can be done on a 3D surface and represented on any viewing angle as a WYSIWYG painting).

Regarding claim 3, Hanrahan discloses the painting first aligns the brush to a normal vector of the surface (see paragraph 4 of page 219; it is noted that the tangent space brush is applied in alignment with the normal vector of the surface).

Regarding claim 4, Hanrahan discloses the painting is performed without first painting the brush on a two dimensional texture space corresponding to the object (see paragraph 4 of page 216. It is to be understood that since the painting is done directly on the 3D shape object, there is no prior painting of the brush on the 2D space of the object).

As per claim 5, Hanrahan discloses converting a selected two-dimensional screen coordinate into a three-dimensional world coordinate (as characterized by the description at paragraph 3 of section 1 at page 215).

Regarding claims 9 and 11-12, Hanrahan discloses computing a tangent plane by computing a normal vector at an intersection point where the brush is applied; and projecting the brush on the surface of the selected area using the tangent plane; the brush is two dimensional; the brush is three dimensional (see paragraph 6 of page 219).

Regarding claim 14, Hanrahan discloses that the intensity of portions of a brush painting varies based on a normal vector of respective portions of the surface (see paragraph 5 of page 220 and paragraph 1 of page 221).

Regarding claim 28, as statements presented above, with respect to claims 1 and 9 above are incorporated herein.

Regarding claim 31, Hanrahan discloses defining a series of points on the parameterized object representing a stroke; positioning and orienting a brush stamp for each point in the series of points in a view independent manner (see paragraph 2-4 of page 218); directly painting the stroke into an object texture as a collection of texture modifications using the brush stamp for each point on the parameterized object in the three dimensional or higher space (see paragraph 4 of page 216 and paragraph 2-3 of page 220).

Regarding claims 34-35 and 38-41, statements presented above, with respect to claim 1 are incorporated herein.

5. Claims 6-7, 18-19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. ("Direct WYSIWYG Painting and Texturing on 3D Shapes" Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223), as applied to claims 1 and 28 above, and further in view of Daniels et al. (US 6,268,865; refer to as Daniels herein).

Regarding claim 6, Hanrahan does not disclose identifying an intersection point by intersecting a vector comprising the three-dimensional world coordinate and a viewing direction and the object.

Daniels discloses identifying an intersection point by intersecting a vector comprising the three-dimensional world coordinate and a viewing direction and the object (see lines 30-35 of column 12 and lines 28-35 of column 13).

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Therefore, it would have been obvious to one of ordinary skill in the art to utilize the method of determining painting position of Daniels to provide a smooth process of applying paint on 3D surface such as one disclosed by Hanrahan.

Regarding claim 7, Hanrahan discloses computing a tangent plane by computing a normal vector at the intersection point; and projecting the brush on the three dimensional surface of the selected area using the tangent plane (see paragraph 6 of page 219).

Regarding claims 18-19, Hanrahan does not disclose before the painting, the brush is rotated in a brush stroke direction; before the painting, a brush resolution for the brush is determined and applied.

Daniels discloses the functional equivalence for before applying the painting, the brush is rotated in a brush stroke direction (see lines 34-41 of col. 20); before the painting, a brush resolution for the brush is determined and applied. See lines 5-13 of col. 9 and Fig. 4).

Therefore, it would have been obvious to one of ordinary skill in the art to utilize the brush and the painting method of Daniels to provide a smooth process of applying paint on 3D surface such as one disclosed by Hanrahan.

Regarding claim 32, Hanrahan does not disclose compiling images produced by the painting into a movie.

Daniels discloses compiling images produced by the painting into a movie (see lines 1-2 of abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to utilize the movie image process of Daniels to provide the advantage of utilizing 3D painting method disclose by Hanrahan to provide a better image process in movie production.

6. Claims 22-24, 33 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. ("Direct WYSIWYG Painting and Texturing on 317 Shapes" Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223) in view of Daniels et al. (JJS 6,268,865) refer to a Daniels herein).

Regarding claims 22-24, statements presented above with respect to claim 1 are incorporated herein. Hanrahan does not disclose reverse projecting texture from a surface of the selected area onto a temporary brush, processing the temporary brush using a selected process; the selected process uses a particular filter; the selected process uses a particular brush.

Daniels discloses reverse projecting texture from a surface of the selected area onto a temporary brush, processing the temporary brush using a selected process; the selected process uses a particular filter; the selected process uses a particular brush. See lines 21-24 of column 6 and lines 19-43 of column 12 and Fig. 9; the saved stroke data corresponds to temporary brush which is mapped to the surface of the selected view that contains surface map information that corresponds to texture).

Therefore, it would have been obvious to one of ordinary skill in the art to utilize the brush and the painting method of Daniels to provide a smooth process of applying paint on 3D surface such as one disclosed by Hanrahan.

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Regarding claim 33, statements presented above, with respect to claims 1 and 32 are incorporated herein.

Regarding claim 37, statements presented above, with respect to claims 1 and 19 are incorporated herein.

7. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. ("Direct WYSIWYG Painting and Texturing on 317 Shapes", Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223) as applied to claim 1 above, and further in view of Morioka et al. (US 6,239,809; refer to as Morioka herein).

Regarding claims 8 and 10, Hanrahan does not disclose interpolated normal vector.

However, this is well known in the art as taught by Morioka. Morioka teaches a image processing comprising a interpolated normal vector (see lines 28-31 of column 12). Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to utilize the teaching of Morioka to provide a more efficient image processing (see lines 17-21 of column 2, Morioka). Also, Hanrahan and Morioka are directed to image processing in three-dimensional space.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. "Direct WYSIWYG Painting and Texturing on 3D Shapes", Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223) and Daniels et al. (US 6,268,865;

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refer to as Daniels herein), as applied to claim 28 above, and further in view of Morioka et al. (US 6,239,809; refer to as Morioka herein).

Regarding claim 30, statements presented above, with respect to claim 8 are incorporated herein.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. (Direct WYSIWYG Painting and Texturing on 317 Shapes" Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223) and Daniels et al. (US 6,268,865; refer to as Daniels herein), as applied to claim 22 above, and further in view of Bossut (US 6,239,807).

Regarding claim 25, the combination of Hanrahan and Daniels does not disclose the particular brush is selected based on a determination of an appropriate brush resolution.

However, this is well known in the art as taught by Bossut. Bossut teaches a method for multi-resolution texture mapping that offers the user the capability of touching up coarse details at one resolution, and fine details at a magnified resolution" (see lines 49-60 of column 6).

Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to utilize the teaching of Bossut to provide the advantage of allowing user to choose the appropriate resolution for painting the image.

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10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanrahan et al. ("Direct WYSIWYG Painting and Texturing on 3D Shapes" Computer Graphics, Vol. 24, No. 4, August 1990, pp. 215-223), as applied to claims 1 and 12 above, and further in view of Gueret (US RE38755).

Regarding claim 13, Hanrahan fails to teach a cylindrical brush having a defined depth.

Gueret discloses a cylindrical brush having a defined depth. See abstract and col. 3, lines 51-63.

Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to utilize the teaching of Hanrahan in the same conventional manner as taught by Gueret; in order to provide a brush which is simple and economic to make and convenient to use. See Gueret's col. 2, lines 1-3.

Allowable Subject Matter

11. Claims 15-17, 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims, because the prior art fail to teach the painting stops beyond a portion of the surface with a normal vector which varies more than a predetermined angle of 90 degrees from an intersection point normal (as recited in claim 16); the painting stops beyond a portion of the surface when a distance from the brush to the portion of the surface is greater than a predetermined threshold (as recited in claim 17).

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12. Claim 36 is allowed over the prior art for at least the reasons indicated above with respect to claims 15-17 and 29.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajous Wesner whose telephone number is 571-272-7791. The examiner can normally be reached on Mondays thru Fridays between 10:30 and 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wesner Sajous

Full-Signatory Authority Patent Examiner (trial)

3/24/06